Claims

[c1]   1. A method for converting a high dynamic range image into a low dynamic range image, the high dynamic range image having a plurality of pixels, the pixels respectively corresponding to a plurality of first luminance values, the method comprising following steps:

(a)converting the first luminance values associated with the pixels into a plurality of second luminance values, a second luminance range of the second luminance values being smaller than a first luminance range of the first luminance values; and

(b)utilizing a film transfer function for mapping the second luminance values associated with the pixels into a plurality of third luminance values to generate the low dynamic range image, wherein the film transfer function adds no visual artifact to the low dynamic range image.

[c2]   2. The method of claim 1 further comprising:

(c) performing a histogram equalization to adjust the second luminance values distributed among the pixels.

[c3]   3. The method of claim 2 wherein step (c) further comprises:

preventing a total number of predetermined pixels cor-

responding to a second luminance value from being greater than a predetermined limit.

[c4]   4. The method of claim 1 wherein step (a) is performed by a global gradient compression.

[c5]   5. An image processing system comprising:

an image generator for generating a high dynamic range image, the high dynamic range image having a plurality of pixels, the pixels respectively corresponding to a plurality of first luminance values; and

an image processing logic for converting the first luminance values associated with the pixels into a plurality of second luminance values and utilizing a film transfer function for mapping the second luminance values associated with the pixels into a plurality of third luminance values without adding visual artifacts to generate a low dynamic range image;

wherein a second luminance range of the second luminance values is smaller than a first luminance range of the first luminance values.

[c6]   6. The image processing system of claim 5 being a digital camera.

[c7]   7. The image processing system of claim 5 wherein the image generator is capable of capturing a plurality of

images with different exposures for generating the high dynamic range image.

[c8]   8. The image processing system of claim 5 wherein the image processing logic is capable of performing a histogram equalization to adjust the second luminance values distributed among the pixels.

[c9]   9. The image processing system of claim 8 wherein the image processing logic is capable of preventing a total number of predetermined pixels corresponding to a second luminance value from being greater than a predetermined limit.

[c10]   10. The image processing system of claim 5 wherein the image processing logic is capable of performing a global gradient compression to convert the first luminance values into the second luminance values.